

SEQUENCE LISTING



#4

<110> Tian, Hui
Schultz, Joshua
Shan, Bei
Tularik Inc.

<120> Sitosterolemia Susceptibility Gene (SSG): Compositions
and Methods of Use

<130> 018781-006020US

<140> US 09/837,992

<141> 2001-04-18

<150> US 60/198,465

<151> 2000-04-18

<150> US 60/204,234

<151> 2000-05-15

<160> 45

<170> PatentIn Ver. 2.1

<210> 1

<211> 652

<212> PRT

<213> Mus musculus

<220>

<223> mouse sitosterolemia susceptibility gene (SSG)
amino acid sequence

<400> 1

Met	Gly	Glu	Leu	Pro	Phe	Leu	Ser	Pro	Glu	Gly	Ala	Arg	Gly	Pro	His
1				5					10					15	

Ile	Asn	Arg	Gly	Ser	Leu	Ser	Ser	Leu	Glu	Gln	Gly	Ser	Val	Thr	Gly
		20						25					30		

Thr	Glu	Ala	Arg	His	Ser	Leu	Gly	Val	Leu	His	Val	Ser	Tyr	Ser	Val
		35					40					45			

Ser	Asn	Arg	Val	Gly	Pro	Trp	Trp	Asn	Ile	Lys	Ser	Cys	Gln	Gln	Lys
	50					55					60				

Trp	Asp	Arg	Gln	Ile	Leu	Lys	Asp	Val	Ser	Leu	Tyr	Ile	Glu	Ser	Gly
	65				70					75					80

Gln	Ile	Met	Cys	Ile	Leu	Gly	Ser	Ser	Gly	Ser	Gly	Lys	Thr	Thr	Leu
			85						90					95	

Leu	Asp	Ala	Ile	Ser	Gly	Arg	Leu	Arg	Arg	Thr	Gly	Thr	Leu	Glu	Gly
		100						105					110		

Glu	Val	Phe	Val	Asn	Gly	Cys	Glu	Leu	Arg	Arg	Asp	Gln	Phe	Gln	Asp
		115					120					125			

Cys	Phe	Ser	Tyr	Val	Leu	Gln	Ser	Asp	Val	Phe	Leu	Ser	Ser	Leu	Thr
					130			135				140			

Val	Arg	Glu	Thr	Leu	Arg	Tyr	Thr	Ala	Met	Leu	Ala	Leu	Cys	Arg	Ser	145	150	155	160
Ser	Ala	Asp	Phe	Tyr	Asn	Lys	Lys	Val	Glu	Ala	Val	Met	Thr	Glu	Leu	165	170	175	
Ser	Leu	Ser	His	Val	Ala	Asp	Gln	Met	Ile	Gly	Ser	Tyr	Asn	Phe	Gly	180	185	190	
Gly	Ile	Ser	Ser	Gly	Glu	Arg	Arg	Arg	Val	Ser	Ile	Ala	Ala	Gln	Leu	195	200	205	
Leu	Gln	Asp	Pro	Lys	Val	Met	Met	Leu	Asp	Glu	Pro	Thr	Thr	Gly	Leu	210	215	220	
Asp	Cys	Met	Thr	Ala	Asn	Gln	Ile	Val	Leu	Leu	Leu	Ala	Glu	Leu	Ala	225	230	235	240
Arg	Arg	Asp	Arg	Ile	Val	Ile	Val	Thr	Ile	His	Gln	Pro	Arg	Ser	Glu	245	250	255	
Leu	Phe	Gln	His	Phe	Asp	Lys	Ile	Ala	Ile	Leu	Thr	Tyr	Gly	Glu	Leu	260	265	270	
Val	Phe	Cys	Gly	Thr	Pro	Glu	Glu	Met	Leu	Gly	Phe	Phe	Asn	Asn	Cys	275	280	285	
Gly	Tyr	Pro	Cys	Pro	Glu	His	Ser	Asn	Pro	Phe	Asp	Phe	Tyr	Met	Asp	290	295	300	
Leu	Thr	Ser	Val	Asp	Thr	Gln	Ser	Arg	Glu	Arg	Glu	Ile	Glu	Thr	Tyr	305	310	315	320
Lys	Arg	Val	Gln	Met	Leu	Glu	Cys	Ala	Phe	Lys	Glu	Ser	Asp	Ile	Tyr	325	330	335	
His	Lys	Ile	Leu	Glu	Asn	Ile	Glu	Arg	Ala	Arg	Tyr	Leu	Lys	Thr	Leu	340	345	350	
Pro	Met	Val	Pro	Phe	Lys	Thr	Lys	Asp	Pro	Pro	Gly	Met	Phe	Gly	Lys	355	360	365	
Leu	Gly	Val	Leu	Leu	Arg	Arg	Val	Thr	Arg	Asn	Leu	Met	Arg	Asn	Lys	370	375	380	
Gln	Ala	Val	Ile	Met	Arg	Leu	Val	Gln	Asn	Leu	Ile	Met	Gly	Leu	Phe	385	390	395	400
Leu	Ile	Phe	Tyr	Leu	Leu	Arg	Val	Gln	Asn	Asn	Thr	Leu	Lys	Gly	Ala	405	410	415	
Val	Gln	Asp	Arg	Val	Gly	Leu	Leu	Tyr	Gln	Leu	Val	Gly	Ala	Thr	Pro	420	425	430	
Tyr	Thr	Gly	Met	Leu	Asn	Ala	Val	Asn	Leu	Phe	Pro	Met	Leu	Arg	Ala	435	440	445	
Val	Ser	Asp	Gln	Glu	Ser	Gln	Asp	Gly	Leu	Tyr	His	Lys	Trp	Gln	Met	450	455	460	

Leu Leu Ala Tyr Val Leu His Val Leu Pro Phe Ser Val Ile Ala Thr 480
 465 470 475
 Val Ile Phe Ser Ser Val Cys Tyr Trp Thr Leu Gly Leu Tyr Pro Glu 495
 485 490
 Val Ala Arg Phe Gly Tyr Phe Ser Ala Ala Leu Leu Ala Pro His Leu 510
 500 505
 Ile Gly Glu Phe Leu Thr Leu Val Leu Leu Gly Ile Val Gln Asn Pro 525
 515 520
 Asn Ile Val Asn Ser Ile Val Ala Leu Leu Ser Ile Ser Gly Leu Leu 540
 530 535
 Ile Gly Ser Gly Phe Ile Arg Asn Ile Gln Glu Met Pro Ile Pro Leu 560
 545 550 555
 Lys Ile Leu Gly Tyr Phe Thr Phe Gln Lys Tyr Cys Cys Glu Ile Leu 575
 565 570
 Val Val Asn Glu Phe Tyr Gly Leu Asn Phe Thr Cys Gly Gly Ser Asn 590
 580 585
 Thr Ser Met Leu Asn His Pro Met Cys Ala Ile Thr Gln Gly Val Gln 605
 595 600
 Phe Ile Glu Lys Thr Cys Pro Gly Ala Thr Ser Arg Phe Thr Ala Asn 620
 610 615
 Phe Leu Ile Leu Tyr Gly Phe Ile Pro Ala Leu Val Ile Leu Gly Ile 640
 625 630 635
 Val Ile Phe Lys Val Arg Asp Tyr Leu Ile Ser Arg 650
 645

<210> 2
 <211> 2258
 <212> DNA
 <213> Mus musculus

<220>
 <223> mouse sitosterolemia susceptibility gene (SSG)

<220>
 <221> CDS
 <222> (47)..(2005)
 <223> mouse sitosterolemia susceptibility gene (SSG)
 protein

<400> 2
 gggacaggcc actagaaaat tcacttgcac ttgcttctctg ctagccatgg gtgagctgcc 60
 ctttctgagt ccagagggag ccagagggcc tcacatcaac agaggggtctc tgagctccct 120
 ggagcaaggt tcgggtcacgg gcacagaggc tcggcacagc ttaggtgtcc tgcattgtgc 180
 ctacagcgtc agcaaccgtg tcgggccttg gtggaacatc aaatcatgcc agcagaagtg 240
 ggacaggcaa atcctcaaag atgtctcctt gtacatcgag agtggccaga ttatgtgcat 300
 cttaggcagc tcaggctcag ggaagaccac gctgctggac gccatctccg ggaggctgcg 360
 gcgcactggg accctggaag gggaggtggt tgtgaatggc tgcgagctgc gcagggacca 420
 gttccaagac tgcttctcct acgtcctgca gagcgacgtt tttctgagca gcctcactgt 480
 gcgcgagacg ttgcgataca cagcgatgct ggccctctgc cgcagctccg cggacttcta 540

```

caacaagaag gtagaggcag tcatgacaga gctgagcctg agccacgtgg cggaccaaat 600
gattggcagc tataatTTTtg ggggaatttc cagtggcgag cggcgccgag tttccatcgc 660
agcccaactc cttcaggacc ccaaggTcat gatgctagat gagccaacca caggactgga 720
ctgcatgact gcaaatcaaaa ttgtccttct cttggctgag ctggctcgca gggaccgaat 780
tgtgattgtc accatccacc agcctcgctc tgagctcttc caacacttcg acaaaattgc 840
catcctgact tacggagagt tgggtgttctg tggcacccca gaggagatgc ttggcttctt 900
caataactgt ggTtaccctt gtctgaaca ttccaatccc tttgattttt acatggactt 960
gacatcagtg gacacccaaa gcagagagcg ggaaatagaa acgtacaagc gagtacagat 1020
gctggaatgt gccttcaagg aatctgacat ctatcacaaa attctggaga acattgaaag 1080
agcacgatac ctgaaaacct taccatggtt tcctttcaaa acaaaagatc ctctgggat 1140
gttcggcaag cttggtgtcc tgctgaggcg agtaacaaga aacttaatga ggaataagca 1200
ggcagtgatt atgctctcgc ttcagaatct gatcatgggc ctcttctca ttttctacct 1260
tctccgctc cagaacaaca cgctaaaggc cgctgtgcag gaccgctgg ggctgctcta 1320
tcagcttgtg ggtgccaccc catacacccg catgctcaat gctgtgaatc tgtttcccat 1380
gctgagagcc gtcagcgacc aggagagtca ggatggcctg tatcataagt ggcagatgct 1440
gctcgctac gtgctacacg tctctccctt cagcgtcatc gccacggtca ttttcagcag 1500
tgtgtgttat tggactctgg gcttgtatcc tgaagttgcc agatttggtt atttctctgc 1560
tgctcttttg gcccctcact taattggaga atttctaaca cttgtgctgc ttggtatagt 1620
ccaaaacctt aatattgtca acagtatagt ggctctgctc agcatctctg ggctgcttat 1680
tggatctgga tttatcagaa acatacaaga aatgccatt cctttaaaaa tcttgggta 1740
ttttacattc caaaaatact gttgtgagat tctcgtggtc aatgagtttt acggcctgaa 1800
cttcacttgt ggtggatcca acacctctat gctaaatcac ccgatgtgcg ccatcaccca 1860
aggggtccag ttcacgcaga aaacctgccc aggtgctaca tccagattca cggcaactt 1920
cctcatctta tatgggttta tcccagctct ggcatccta ggaatagtga tttttaagt 1980
cagggactac ctgattagca gatagttaag atgacaggca ggaaagggtt aatgggcagg 2040
cacgcccact gtggagcaca gagaagtact gtcttcaacc atcaggattc catctgcgac 2100
ccttgtgtct gacccttgtg tctatccgga gcccgaagg caacgagaac tcacagccct 2160
ctgctattcc agcttgtggg gcaatgtggt gcttggacat tgtgactgaa ctggtccaat 2220
aatgtaaata ataataattc ataaacctac aggacatt 2258

```

<210> 3

<211> 651

<212> PRT

<213> Homo sapiens

<220>

<223> human sitosterolemia susceptibility gene (SSG)
amino acid sequence

<400> 3

```

Met Gly Asp Leu Ser Ser Leu Thr Pro Gly Gly Ser Met Gly Leu Gln
 1              5              10             15

Val Asn Arg Gly Ser Gln Ser Ser Leu Glu Gly Ala Pro Ala Thr Ala
 20              25              30

Pro Glu Pro His Ser Leu Gly Ile Leu His Ala Ser Tyr Ser Val Ser
 35              40              45

His Arg Val Arg Pro Trp Trp Asp Ile Thr Ser Cys Arg Gln Gln Trp
 50              55              60

Thr Arg Gln Ile Leu Lys Asp Val Ser Leu Tyr Val Glu Ser Gly Gln
 65              70              75             80

Ile Met Cys Ile Leu Gly Ser Ser Gly Ser Gly Lys Thr Thr Leu Leu
 85              90              95

Asp Ala Met Ser Gly Arg Leu Gly Arg Ala Gly Thr Phe Leu Gly Glu
100              105             110

```

Val Tyr Val Asn Gly Arg Ala Leu Arg Arg Glu Gln Phe Gln Asp Cys
 115 120 125
 Phe Ser Tyr Val Leu Gln Ser Asp Thr Leu Leu Ser Ser Leu Thr Val
 130 135 140
 Arg Glu Thr Leu His Tyr Thr Ala Leu Leu Ala Ile Arg Arg Gly Asn
 145 150 155 160
 Pro Gly Ser Phe Gln Lys Lys Val Glu Ala Val Met Ala Glu Leu Ser
 165 170 175
 Leu Ser His Val Ala Asp Arg Leu Ile Gly Asn Tyr Ser Leu Gly Gly
 180 185 190
 Ile Ser Thr Gly Glu Arg Arg Arg Val Ser Ile Ala Ala Gln Leu Leu
 195 200 205
 Gln Asp Pro Lys Val Met Leu Phe Asp Glu Pro Thr Thr Gly Leu Asp
 210 215 220
 Cys Met Thr Ala Asn Gln Ile Val Val Leu Leu Val Glu Leu Ala Arg
 225 230 235 240
 Arg Asn Arg Ile Val Val Leu Thr Ile His Gln Pro Arg Ser Glu Leu
 245 250 255
 Phe Gln Leu Phe Asp Lys Ile Ala Ile Leu Ser Phe Gly Glu Leu Ile
 260 265 270
 Phe Cys Gly Thr Pro Ala Glu Met Leu Asp Phe Phe Asn Asp Cys Gly
 275 280 285
 Tyr Pro Cys Pro Glu His Ser Asn Pro Phe Asp Phe Tyr Met Asp Leu
 290 295 300
 Thr Ser Val Asp Thr Gln Ser Lys Glu Arg Glu Ile Glu Thr Ser Lys
 305 310 315 320
 Arg Val Gln Met Ile Glu Ser Ala Tyr Lys Lys Ser Ala Ile Cys His
 325 330 335
 Lys Thr Leu Lys Asn Ile Glu Arg Met Lys His Leu Lys Thr Leu Pro
 340 345 350
 Met Val Pro Phe Lys Thr Lys Asp Ser Pro Gly Val Phe Ser Lys Leu
 355 360 365
 Gly Val Leu Leu Arg Arg Val Thr Arg Asn Leu Val Arg Asn Lys Leu
 370 375 380
 Ala Val Ile Thr Arg Leu Leu Gln Asn Leu Ile Met Gly Leu Phe Leu
 385 390 395 400
 Leu Phe Phe Val Leu Arg Val Arg Ser Asn Val Leu Lys Gly Ala Ile
 405 410 415
 Gln Asp Arg Val Gly Leu Leu Tyr Gln Phe Val Gly Ala Thr Pro Tyr
 420 425 430

Thr Gly Met Leu Asn Ala Val Asn Leu Phe Pro Val Leu Arg Ala Val
 435 440 445
 Ser Asp Gln Glu Ser Gln Asp Gly Leu Tyr Gln Lys Trp Gln Met Met
 450 455 460
 Leu Ala Tyr Ala Leu His Val Leu Pro Phe Ser Val Val Ala Thr Met
 465 470 475 480
 Ile Phe Ser Ser Val Cys Tyr Trp Thr Leu Gly Leu His Pro Glu Val
 485 490 495
 Ala Arg Phe Gly Tyr Phe Ser Ala Ala Leu Leu Ala Pro His Leu Ile
 500 505 510
 Gly Glu Phe Leu Thr Leu Val Leu Leu Gly Ile Val Gln Asn Pro Asn
 515 520 525
 Ile Val Asn Ser Val Val Ala Leu Leu Ser Ile Ala Gly Val Leu Val
 530 535 540
 Gly Ser Gly Phe Leu Arg Asn Ile Gln Glu Met Pro Ile Pro Phe Lys
 545 550 555 560
 Ile Ile Ser Tyr Phe Thr Phe Gln Lys Tyr Cys Ser Glu Ile Leu Val
 565 570 575
 Val Asn Glu Phe Tyr Gly Leu Asn Phe Thr Cys Gly Ser Ser Asn Val
 580 585 590
 Ser Val Thr Thr Asn Pro Met Cys Ala Phe Thr Gln Gly Ile Gln Phe
 595 600 605
 Ile Glu Lys Thr Cys Pro Gly Ala Thr Ser Arg Phe Thr Met Asn Phe
 610 615 620
 Leu Ile Leu Tyr Ser Phe Ile Pro Ala Leu Val Ile Leu Gly Ile Val
 625 630 635 640
 Val Phe Lys Ile Arg Asp His Leu Ile Ser Arg
 645 650

<210> 4
 <211> 2340
 <212> DNA
 <213> Homo sapiens

<220>
 <223> human sitosterolemia gene (SSG)

<220>
 <221> CDS
 <222> (107)..(2062)
 <223> human sitosterolemia susceptibility gene (SSG)
 protein

<400> 4
 gtcagggtgga gcaggcaggg cagtctgccca cgggctcccc aactgaagcc actctggggga 60
 ggggtccggcc accagaaaat ttgccagct ttgtgcctg ttggccatgg gtgacctctc 120
 atctttgacc cccggagggt ccatgggtct ccaagtaaac agaggctccc agagctccct 180

ggaggggggct cctgccaccg ccccgagacc tcacagcctg ggcatcctcc atgcctccta 240
 cagcgctcagc caccgcgtga ggccctgggtg ggacatcaca tcttgccggc agcagtggac 300
 caggcagatc ctcaaagatg tctccttgta cgtggagagc gggcagatca tgtgcaccc 360
 aggaagctca ggctccggga aaaccacgct gctggacgcc atgtccggga ggctggggcg 420
 cgcgggggacc ttctctgggg aggtgtatgt gaacggccgg gcgctgcgcc gggagcagtt 480
 ccaggactgc ttctcctacg tcctgcagag cgacaccctg ctgagcagcc tcaccgtgcg 540
 cgagacgctg cactacaccg cgctgctggc catccgcccgc ggcaatcccg gctccttcca 600
 gaagaagggtg gaggccgtca tggcagagct gagtctgagc catgtggcag accgactgat 660
 tggcaactac agcttggggg gcatttccac gggtgagcgg cgccgggtct ccacgcagc 720
 ccagctgctc caggatccta aggtcatgct gtttgatgag ccaaccacag gcctggactg 780
 catgactgct aatcagattg tcgtcctcct ggtggaactg gctcgcagga accgaattgt 840
 ggttctcacc attcaccagc cccgttctga gctttttcag ctctttgaca aaattgccat 900
 cctgagcttc ggagagctga ttttctgtgg cagccagcgg gaaatgcttg atttcttcaa 960
 tgactgcggg tacccttgct ctgaacattc aaaccctttt gacttctata tggacctgac 1020
 gtcagtggat acccaaagca aggaacggga aatagaaaacc tccaagagag tccagatgat 1080
 agaatctgcc tacaagaaat cagcaatttg tcataaaaact ttgaagaata ttgaaagaat 1140
 gaaacacctg aaaacggttac caatgggttc tttcaaaaacc aaagattctc ctggagtttt 1200
 ctctaaactg ggtgttctcc tgaggagagt gacaagaaac ttggtgagaa ataagctggc 1260
 agtgattacg cgtctccttc agaattctgat catgggtttg ttcctccttt tcttcgttct 1320
 gcgggtccga agcaatgtgc taaagggtgc tatccaggac cgcgtaggtc tcctttacca 1380
 gtttgtgggc gccaccccggt acacaggcat gctgaacgct gtgaatctgt ttcccgtgct 1440
 gcgagctgtc agcgaccagg agagtcagga cggcctctac cagaagtggc agatgatgct 1500
 ggccatgca ctgcacgtcc tccccttcag cgctgttgcc accatgattt tcagcagtgt 1560
 gtgctactgg acgctgggct tacatcctga ggttgcccga tttggatatt tttctgctgc 1620
 tctcttgccc ccccaactaa ttgggtgaatt tctaactctt gtgctacttg gtatcgtcca 1680
 aaatccaaat atagtcaaca gtgtagtggc tctgctgtcc attgcggggg tgcttgttgg 1740
 atctggattc ctcaagaaat tacaagaaat gccattcct tttaaaatca tcagttattt 1800
 tacattccaa aaatattgca gtgagattct tgtagtcaat gagttctacg gactgaattt 1860
 cacttgtggc agctcaaatg tttctgtgac aactaatcca atgtgtgcct tcaactcaagg 1920
 aattcaattc attgagaaaa cctgcccagg tgcaacatct agattcacia tgaactttct 1980
 gattttgtat tcatattatc cagctcttgt catcctagga atagttgttt tcaaaataag 2040
 ggatcatctc attagcaggt agtgaaagcc atggctggga aaatggaagt gaagctgccg 2100
 actgtgcatg actgctctga acgtctgaaa tgagagtggc atgtatttct ttcttgacag 2160
 gacatctcaa gtcttttaac cattaagact ccatttgtgc ctcttgatc caagcaggcc 2220
 ttgaatgcaa tggaagtggg ttatagtccc ttgctcttac aacttgagc gacatgtggg 2280
 tatttggaaa ttgtgactga gcggacccaa gaatgtaaat aatattcata aacctatggg 2340

<210> 5
 <211> 18
 <212> PRT
 <213> Homo sapiens

<220>
 <223> SSG signature sequence 1

<400> 5
 Ala Ala Leu Leu Ala Pro His Leu Ile Gly Glu Phe Leu Thr Leu Val
 1 5 10 15

Leu Leu

<210> 6
 <211> 11
 <212> PRT
 <213> Homo sapiens

<220>
 <223> SSG signature sequence 2

<400> 6
Phe Ile Pro Ala Leu Val Ile Leu Gly Ile Val
1 5 10

<210> 7
<211> 249
<212> DNA
<213> Homo sapiens

<220>
<223> exon 1 of hSSG

<400> 7
gtcaggtgga gcaggcaggg cagtctgcca cgggctcccc aactgaagcc actctgggga 60
gggtccggcc accagaaaat ttgcccagct ttgctgcctg ttggccatgg gtgacctctc 120
atctttgacc cccggagggt ccatgggtct ccaagtaaac agaggctccc agagctccct 180
ggagggggct cctgccaccg ccccgagacc tcacagcctg ggcatcctcc atgcctccta 240
cagcgtcag 249

<210> 8
<211> 122
<212> DNA
<213> Homo sapiens

<220>
<223> exon 2 of hSSG

<400> 8
ccaccgcgtg aggccctggt gggacatcac atcttgccgg cagcagtgga ccaggcagat 60
cctcaaagat gtctccttgt acgtggagag cgggcagatc atgtgcatcc taggaagctc 120
ag 122

<210> 9
<211> 137
<212> DNA
<213> Homo sapiens

<220>
<223> exon 3 of hSSG

<400> 9
gctccgggaa aaccacgctg ctggacgcca tgtccgggag gctggggcgc gcggggacct 60
tcctggggga ggtgtatgtg aacggccggg cgctgcgccg ggagcagttc caggactgct 120
tctcctacgt cctgcag 137

<210> 10
<211> 103
<212> DNA
<213> Homo sapiens

<220>
<223> exon 4 of hSSG

<400> 10
agcgacaccc tgctgagcag cctcaccgtg cgcgagacgc tgcactacac cgcgctgctg 60
gccatccgcc gcggcaatcc cggctccttc cagaagaagg tgg 103

<210> 11
 <211> 129
 <212> DNA
 <213> Homo sapiens

<220>
 <223> exon 5 of hSSG

<400> 11
 aggccgctcat ggcagagctg agtctgagcc atgtggcaga ccgactgatt ggcaactaca 60
 gcttggggggg catttccacg ggtgagcggc gccgggtctc catcgagcc cagctgctcc 120
 aggatccta 129

<210> 12
 <211> 140
 <212> DNA
 <213> Homo sapiens

<220>
 <223> exon 6 of hSSG

<400> 12
 aggtcatgct gtttgatgag ccaaccacag gcctggactg catgactgct aatcagattg 60
 tcgtcctcct ggtggaactg gtcgcagga accgaattgt ggttctcacc attcaccagc 120
 cccgttctga gctttttcag 140

<210> 13
 <211> 130
 <212> DNA
 <213> Homo sapiens

<220>
 <223> exon 7 of hSSG

<400> 13
 ctctttgaca aaattgccat cctgagcttc ggagagctga ttttctgtgg cacgccagcg 60
 gaaatgcttg atttcttcaa tgactgcggt tacccttgtc ctgaacattc aaaccctttt 120
 gacttctata 130

<210> 14
 <211> 214
 <212> DNA
 <213> Homo sapiens

<220>
 <223> exon 8 of hSSG

<400> 14
 tggacctgac gtcagtggat acccaaagca aggaacggga aatagaaacc tccaagagag 60
 tccagatgat agaatctgcc tacaagaaat cagcaatttg tcataaaaact ttgaagaata 120
 ttgaaagaat gaaacacctg aaaacggtac caatggttcc tttcaaaacc aaagattctc 180
 ctggagtttt ctctaaactg ggtgttctcc tgag 214

<210> 15
 <211> 206
 <212> DNA
 <213> Homo sapiens

<220>

<223> exon 9 of hSSG

<400> 15
gagagtgcaca agaaacttgg tgagaaataa gctggcagtg attacgcgtc tccttcagaa 60
tctgatcatg gggtttgtcc tccttttctt cgttctgcgg gtccgaagca atgtgctaaa 120
gggtgctatc caggaccgcg taggtctcct ttaccagttt gtgggcgcca ccccgtaac 180
aggcatgctg aacgctgtga atctgt 206

<210> 16

<211> 139

<212> DNA

<213> Homo sapiens

<220>

<223> exon 10 of hSSG

<400> 16
ttcccgtgct gcgagctgtc agcgaccagg agagtcagga cggcctctac cagaagtggc 60
agatgatgct ggctatgca ctgcacgtcc tccccttcag cgttggtgcc accatgattt 120
tcagcagtgt gtgctactg 139

<210> 17

<211> 186

<212> DNA

<213> Homo sapiens

<220>

<223> exon 11 of hSSG

<400> 17
gacgctgggc ttacatcctg aggttgcccg atttgatgat tttctgctg ctctcttggc 60
ccccactta attggtgaat ttctaactct tgtgctactt ggtatcgctc aaaatccaaa 120
tatagtcaac agtgtagtgg ctctgctgtc cattgcgggg gtgcttggtg gatctggatt 180
cctcag 186

<210> 18

<211> 113

<212> DNA

<213> Homo sapiens

<220>

<223> exon 12 of hSSG

<400> 18
aaacatacaa gaaatgccca ttccttttaa aatcatcagt tattttacat tccaaaaata 60
ttgcagtgag attctttag tcaatgagtt ctacggactg aatttcactt gtg 113

<210> 19

<211> 472

<212> DNA

<213> Homo sapiens

<220>

<223> exon 13 of hSSG

<400> 19
gcagctcaaa tgtttctgtg acaactaatc caatgtgtgc cttcactcaa ggaattcaat 60
tcattgagaa aacctgcca ggtgcaacat ctagattcac aatgaacttt ctgattttgt 120
attcatttat tccagctctt gtcacccatg gaatagtgtt tttcaaaata agggatcatc 180
tcattagcag gtagtgaaa ccatggctgg gaaaatggaa gtgaagctgc cgactgtgca 240
tgactgctct gaacgtctga aatgagagtg ccatgtattt ctttcttgac aggacatctc 300
aagtctttta accattaaga ctccatttgt gcctcttgga tccaagcagg ccttgaatgc 360
aatggaagtg gtttatagtc ccttgctctt acaacttgca gggacatgtg gttatttgga 420
aattgtgact gagcggaccc aagaatgtaa ataatttca taaacctatg gg 472

<210> 20
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 1

<400> 20
gcgtcaggta aggtag 16

<210> 21
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 2

<400> 21
cctttaaaagc caccgc 16

<210> 22
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 2

<400> 22
agctcaggta agcttg 16

<210> 23
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 3

<400> 23
gccccgcagg ctccgg 16

<210> 24
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 3

<400> 24
cctgcaggtg ggcgcg

16

<210> 25
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 4

<400> 25
ctcctgcaga gcgaca

16

<210> 26
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 4

<400> 26
aaggtgggtg cagccc

16

<210> 27
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 5

<400> 27
tgcaggtgga ggccgt

16

<210> 28
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 5

<400> 28
gatcctagta agtggc

16

<210> 29
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 6

<400> 29
tgctggcaga ggcat

16

<210> 30
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 6

<400> 30
ttttcaggta agagg

16

<210> 31
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 7

<400> 31
tctggtcagc tctttg

16

<210> 32
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 7

<400> 32
ttctatagta agtttt

16

<210> 33
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 8

<400> 33
aacttttagt ggacct

16

<210> 34
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 8

<400> 34
tcctgaggta agaggc 16

<210> 35
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 9

<400> 35
tgttttcagg agagtg 16

<210> 36
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 9

<400> 36
aatctgtgta agtgcc 16

<210> 37
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 10

<400> 37
catccccagt tcccgt 16

<210> 38
<211> 17
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 10

<400> 38
gctactggtg aggggtt 17

<210> 39
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 11

<400> 39
cttttctagg acgctg 16

<210> 40
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 11

<400> 40
tcctcaggta agatat 16

<210> 41
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 12

<400> 41
tttcttaaga aacata 16

<210> 42
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 3' splicing site for exon 12

<400> 42
acttgtggta agtatt 16

<210> 43
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<223> 5' splicing site for exon 13

<400> 43
ccttgacagg cagctc 16

<210> 44
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:6-His epitope
tag

<400> 44
His His His His His His
1 5

<210> 45
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:anti-DYKDDDDK
epitope tag

<400> 45
Asp Tyr Lys Asp Asp Asp Asp Lys
1 5